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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
SMITH, CAROLYN L

ART UNIT	PAPER NUMBER
1631	

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/900,491	OREN ET AL.	
	Examiner	Art Unit	
	Carolyn L Smith	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 25 November 2002 .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) 5 and 13 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-4,6-12 and 14-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 1-26 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Applicants elections without traverse of Specie B (pharmaceutical substance effect(s) prediction with evaluating harmful side effects) and Specie C (single pharmaceutical substance effect(s) evaluation) in Paper No. 7, filed 11/25/02, are acknowledged. Claims 5 and 13 are withdrawn from consideration as being drawn to non-elected species.

The information disclosure statement filed 11/14/01 fails to comply with the provisions of 37 CFR 1.97, 1.98, and MPEP § 609, because references AR-AZ, BA, BC-BD, and BF lack a publication date on the actual copy, only the website was noted. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609, ¶ C(1).

New drawings were filed on 12/4/02 and have been approved by the draftsperson.

Claims herein under examination are 1-4, 6-12, and 14-26.

Claims Rejected Under 35 U.S.C. § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 6-12, and 14-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Claims 1 (line 11) and 12 (line 9) recite the phrase "said interactions" which is set forth without clear antecedent basis in prior wording of the claims. Claims 2-4, 6-11, and 14-18 are also rejected due to their direct or indirect dependency from claims 1 and 12.

Claims 19 (lines 3 and 5), 20 (line 2), and 21 (line 2) are vague and indefinite due to the unclarity of citing abbreviations, such as ALT and AST. Correction is suggested by amending in of the full name in parentheses. Claims 22-24 are also rejected due to their dependency from claims 20 and 21.

Claim 25 (lines 4-6, and 9) recites the phrase "said states" which is set forth without clear antecedent basis in prior wording of the claim. Claim 26 is also rejected due to its dependency from claim 25.

Claim 25 (line 9) recites the phrase "said relationships" which is set forth without clear antecedent basis in prior wording of the claim. Claim 26 is also rejected due to its dependency from claim 25.

Claim Rejections – 35 USC §102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Comanor et al. (P/N 5,860,917).

Comanor et al. ('917) describe software, methods, and devices for evaluating correlations between observed phenomena and one or more factors having putative statistical relationships with the phenomena, particularly in predicting therapeutic outcomes (col. 1, lines 6-12). Comanor et al. discuss the use of statistical methods to determine the likelihood of a particular patient's response to a treatment (col. 1, lines 26-30). Comanor et al. disclose that statistical methods can be used on minor side effects to assist in evaluating treatment options (col. 1, lines 46-49). Comanor et al. disclose Interferon-α (INFα) as a treatment for Hepatitis B patients (col. 15, lines 50-52). Comanor et al. disclose methods applied to determine a model of predicting Hepatitis B patients' likelihood of response to INFα by collecting clinical data involving serum concentrations of aminotransferase (ALT) and aspartate aminotransferase (AST) (col. 15, lines 50-52 and 62-65 and col. 16, lines 12-13). Comanor et al. disclose the data for month 1 and month 0 being incorporated into models to obtain ratios of the ALT and AST levels as response measurements of the interferon treatment (col. 16, lines 13-25 and Table 1). In claim 4 of '917, Comanor et al. disclose a treatment outcome score comprising a value on a scale where there is a likely success region, a likely failure region, and an intermediate region, which encompasses claims 20-23 of the instant invention.

Thus, Comanor et al. anticipate the claims 19-23 of the instant invention.

Claim Rejections – 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. (e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 6-12, 14-18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staub (P/N 5,546,507), in view of Seilhamer et al. (P/N 6,114,114).

Staub teaches computer systems that automatically generate knowledge bases to create logical trees (relationships) (col. 1, lines 7-11) which enable the generation of opinions on a subject based on the knowledge contained in the knowledge bases (col. 1, lines 18-20). Staub teaches an expert in the field of knowledge can construct the knowledge base as a decision tree (diagram) (col. 3, lines 49-54) by building a logical tree and entering appropriate information for the nodes and path legs in the tree (col. 3, lines 61-63) which represent interactions and relationships in between the components (col. 4, lines 11-13) of the subject matter which themselves possess distinct characteristics and are relevant to a specific domain, or state (col. 4, lines 10-13). Staub teaches this generation of expert code is analyzed in terms of its nodes and legs (col. 3, lines 64-67) so that users may take advantage of the stored knowledge base (col. 4,

lines 1-3). Staub teaches the above-mentioned components contain attributes (characteristics) which have unique values (col. 4, lines 15-17). Staub teaches that within the system are facts which feature an attribute, operator, and a value with the operator stating the relationship between the attribute and value (col. 4, lines 27-32). Staub teaches the facts help define a formula (col. 4, line 32), so that after a user defines an attribute and identifies possible values, a user may then create a path leg formula (col. 4, lines 33-36), or numerical value representing the relationship or interaction between the nodes. Staub does not teach the interaction between a biological entity and a pharmaceutical substance or any clinical testing.

Seilhamer et al. disclose the method of testing biological entities, such as liver cell(s) or tissue(s) (col. 7, lines 18-22), with drugs to predict drug toxicity or efficacy (col. 7, lines 41-48). Seilhamer et al. disclose the analysis used to differentiate between liver cells isolated from patients treated and untreated with a drug can help distinguish between pathology caused by the disease or the drug (col. 7, lines 56-61). Seilhamer et al. disclose the detection of side effects of a drug will lead to further analysis where models will be selected (col. 8, lines 28-32). Seilhamer et al. disclose the use of the analysis in a clinical setting using tissue or cells, such as blood (col. 8, lines 33-36). Seilhamer et al. disclose the calculation of values from the laboratory analysis that was performed (col. 9, lines 4-9), thus providing a quantitative model. Seilhamer et al. disclose a database that stores data of collected sequences that can be used to represent cells featuring various characteristics, such as age and disease (col. 11, lines 20-28). Seilhamer et al. disclose processing data for the sequences, obtaining values, and subsequently dividing these data sets (col. 11, lines 29-53). These data can be further sorted into various datasets to compared in other ways and dimensions (col.. 11, lines 54-57). Seilhamer et al. disclose the use

of two different libraries to obtain ratios (col. 11, lines 58-67). Any number of subtractions can be made between the libraries (col. 12, lines 1-6) which would allow for calibration or testing. The Factura software mentioned can edit out portions of sequence not likely to be of interest (col. 12, lines 46-49) which is another form of calibration. Seilhamer et al. disclose the identification of matches between reference sequences and database entries to make further deductions (col. 13, lines 45-48). The relationships between data groupings are shown in graphic diagrams showing overlap and statistical views (col. 14, lines 24-29). Seilhamer et al. disclose output from an operation in the form of sorted lists, generates ratios, and further subcategories the database entries (col. 16, lines 22-60). Seilhamer et al. disclose the treatment of a disease in rats via administration of an agent to half of the test subjects, thus providing a baseline (control) group, infected and untreated group, and infected and treated group (col. 19, lines 61-63) in which calibration and testing could take place. Different data samples are collected and analyzed against individual and groups to study various comparisons, including pre- and post-treatment of controls and infected groups, and subtracted as needed (col. 20, lines 1-12) in order to gain understanding of the agents' interactions. Various states, such as hepatic deterioration or healing, are examined and drug effects are determined (col. 20, lines 13-17). Seilhamer et al. disclose the use of blood tests for enzymes to detect liver toxicity (col. 20, lines 17-19). All of the subtractions performed on the data via computers can then be used to identify potential clinical markers and eliminate others (col. 20, lines 23-36). Resulting markers are further tested in blood samples to validate the selection (col. 20, lines 35-37). Seilhamer et al. disclose that clinical trials can begin and further testing resumes as mentioned above (col. 20, lines 43-52).

Relationships between toxicity indicators and other signs and symptoms are evaluated (col. 20, lines 52-56).

Staub points out that expert systems make knowledge available to users and assist in analyzing a problem (col. 1, lines 14-16). Staub also states that the knowledge base may change and need to be updated (col. 1, lines 55-56). This is especially true in the molecular biology and computer science fields where procedures and practices are constantly changing and improving, as stated by Seilhamer et al. (col. 1, lines 20-23 and col. 2, lines 22-25). Staub discusses changes in expert systems can be accomplished by using a graphical user interface to create or add to a knowledge base without prior knowledge of artificial intelligence computer languages (col. 1, lines 66-67 and col. 2, lines 8). A skilled artisan in the art would have been motivated to utilize and manage the plethora of data analyses in molecular biology, as stated by Seilhamer et al. (col. 3, lines 53-57), with the automated system and method, as stated by Staub, which could easily be updated so that improvements or changes in the knowledge the field could be quickly incorporated for others to utilize (Staub, col. 2, lines 31-36). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the liver toxicity/drug interaction tests and data (as stated by Seilhamer et al.) into a user friendly expert system (as stated by Staub), as this would allow the quick dissemination of the important drug discoveries that could be used in clinical trials (Seilhamer et al., col. 20, 43-46) and avoid unnecessary delays, as described by Staub (col. 1, lines 55-63).

Thus, Staub, in view of Seilhamer et al., motivate the limitations in claims 1-4, 6-12, 14-18 and 25 of the instant invention.

Conclusion

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR §1.6(d)). The CM1 Fax Center number is either (703) 308-4242 or (703) 305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn Smith, whose telephone number is (703) 308-6043. The examiner can normally be reached Monday through Friday from 8 A.M. to 4:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached on (703) 308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instruments Examiner Tina Plunkett whose telephone number is (703) 305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

January 30, 2003

ARDIN H. MARSCHEL
PRIMARY EXAMINER